DOCUMENT RESUME

ED 231 573 RC 014 178

AUTHOR Muse, Ivan D.; And Others
TITLE Rural Education in Colorado: Recent Research Findings.
PUB DATE 6 Jun 83
NOTE 17p.; Paper presented at the Annual Colorado Rural and Small Schools Conference (3rd, Fort Collins, CO, June 6, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; *Administrators; Comparative Analysis; Consolidated Schools; Courses; Declining Enrollment; *Educational Finance; Elementary Secondary Education; Extracurricular Activities; Principals; Problems; Profiles; *Rural Population; Rural Schools; School Community Relationship; School Size; *Small Schools; State Surveys; Superintendents; Teacher Recruitment; *Teachers; Teacher Salaries; Transportation
IDENTIFIERS *Colorado

ABSTRACT

Of the 105 small K-12 rural public school districts (enrollments under 900) identified in the Colorado study, 19 were randomly chosen for use in gathering information to assist educators in understanding and improving the education of rural residents. A 100% response rate to the 123-item questionnaire mailed to superintendents provided information on district characteristics, i.e., enrollment size, district size, special funding aid, occupation of residents, bond issues, and transportation (number of students bused, distance bused, and cost). Information gathered on district leaders (superintendents and principals) included ages, job classifications, educational levels, salaries, previous employment, hours worked per week, and major on-going concerns. District staff are discussed in terms of the number of full-time teachers, number of specialists, salaries, secondary subject preparation, and recruitment. Students are addressed via superintendents' comparisons of their academic achievement with national averages (39.4% ranked their students above national average), number of graduates per district, and number of National Merit Exam finalists (2). Finances were cited as the most serious on-going concern, followed by securing qualified teachers, working with the community, and the issues of district consolidation. A summary of findings and a table showing 1983 comparisons of Colorado students to those of a national study concludes the report. (AH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED231573

RURAL EDUCATION IN COLORADO: RECENT RESEARCH FINDINGS

Paper Presented at the Third Annual Colorado
Rural and Small Schools Conference
Colorado State University
Fort Collins, Colorado
June 6, 1983

by
Dr. Ivan D. Muse, Professor of Education, College of Education
Dr. Bruce O. Barker, Division of Continuing Education
Dr. Ralph B. Smith, Associate Dean, College of Education

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Bruce O. Barker

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Brigham Young University
Provo, Utah 84602

RC014178

Rural Education in Colorado: Recent Research Findings

by

Ivan D. Muse, Bruce O. Barker and Ralph B. Smith

In the past, relatively few educational researchers have taken an interest in the needs and problems of America's rural schools, despite the fact that a large number of America's youngsters attend schools classified as rural. In fact, depending on one's definition of rural, as many as two-thirds of the nation's 16,000 school districts are considered as rural districts and these enroll up to one-third of all public school students in the United States. Furthermore, with the decline in district consolidation and the current population shift to non-metropolitan areas, it is clearly evident that rural schools will continue to play a significant role in the future educational development of a large segment of our society. In this regard, it is very important that these schools receive current information about educational practices that will be of value in making critical school decisions.

Currently, very little data are available about rural school systems in our society. This is particularly true of the very small systems such as K-12 districts which enroll less than 1,000 students (Nachtigal, 1979).

During the 1980-81 school year, Colorado reported a total of 181 public school districts (Education Directory - Fall 1980: Local Education Agencies). With the exception of two districts, they were all K-12 systems. Of the 181 total districts in Colorado, 105 enrolled less than 900 students each (58.0 percent). These are

clearly rural districts and precise data about them is lacking.

Statement of Purpose

The purpose of this study was to determine the number of K-12 public school districts in Colorado which enroll less than 900 students each; and to gather data from a sample of these districts that will assist educators in understanding and improving the education of rural residents.

METHODS AND PROCEDURES

The sample used for this study consisted of school superintendents in 19 randomly selected, operating K-12 public school districts in Colorado with an enrollment of less than 900 students each.

A one hundred and twenty-three item, self-administered questionnaire was designed by the researchers for use in collecting the data presented in this study. The questionnaire was field tested in 1982 by several rural districts and was found to be suitable for the purposes of the study.

The researchers identified all of the K-12 public school districts in Colorado which enroll less than 900 students each (105 districts). These districts enrolled a combined total of 32,613 students for the 1980-81 school year (5.9 percent of the state's 550,589 public school students).

Nineteen districts were selected for a random sample. Each of the 105 districts enrolling less than 900 students was assigned a different number and the 19 selected were chosen by consulting a table of random numbers. These districts represented 18.1 percent of the study population. Questionnaires were then mailed to superintendents

of the districts selected in the sample. All 19 questionnaires were later returned, representing a 100 percent return rate.

The Statistical Analysis System (SAS) computer program for the social sciences was used to list the frequency distributions; and to calculate the mean, standard deviation, range and standard error of mean for each of the 123 variables taken from the questionnaire.

FINDINGS

District Enrollments

Student enrollments per district ran from 35 students to 825 students, with a mean enrollment of 239 students. When queried as to the future growth of the district, 10.5 percent of the superintendents felt the enrollment trend was to increase, while 42.1 percent expected it would remain the same, and 47.4 percent anticipated that student enrollments would decrease.

District Leadership

With reference to district leadership, 63.2 percent of the respondents were full-time superintendents, 31.5 percent were superintendent/principal combinations, and 5.3 percent were classified as "other."

In regards to age, 31.6 percent of the superintendents were in the 45-49 age category while 15.8 percent were between 40-44 years old and another 15.8 percent were between 35-39 years old. Only 5.3 percent were less than 35 years old and 15.8 percent were over 54 years old. As to number of years as superintendent, the range was one to 19 years, with the mean between four and five years and a standard deviation of 4.3.

Seventy-four percent of the superintendents held the master's

degree, 10.5 percent held the specialist degree, and 10.2 percent held the doctorate. Only one superintendent was employed who held only the bachelor's degree.

The majority of superintendents' annual salaries were in the $25,000 to $29,999 range (36.8 percent). However, 31.6 percent received between $30,000 and $34,999; 10.5 received over $35,000 annually while four (21.1 percent) were paid less than $25,000.

As to previous employment with the district prior to appointment as superintendent, 36.8 percent had worked previously for the district while 63.2 percent came from other positions outside the district.

In relation to the number of hours worked each week, most (42.1 percent) reported a work week between 51 to 55 hours, while 31.6 percent indicated they worked between 46 and 50 hours weekly. Only one superintendent reported a work week of 41 to 45 hours per week and four (21.1 percent) indicated they worked in excess of 55 hours each week.

Superintendents were asked to rank the three "major on-going challenges confronting their school district." Ranked first by 55.6 percent was the problem of "securing adequate school monies." Ranked second was the task of "securing qualified teachers" (29.4 percent), and ranked third was "working with the community" and the issue of "district consolidation" (both at 17.6 percent).

Transportation

Superintendents were asked to note the percent of students enrolled in their district who were bused to school. The percentages ranged from 30 percent to 100 percent. The average was 69.6 percent. The greatest one-way distance students were bused to school ranged

from three miles to 51 miles, with the mean at 28 miles and a standard deviation of 12.3.

The geographical size of the districts varied from 50 square miles to 2,000 square miles, with the average at 677 square miles.

Special School Funding

Superintendents were asked about state support for funding to aid small rural districts. Over 73 percent reported receipt of such aid while 26.3 percent received no such aid.

Primary Occupations of School Patrons

Superintendents were asked to rank the occupations of those living within district boundaries. As was expected, agriculture was ranked first (64.7 percent), followed by ranching and mining. The most frequently reported annual family gross income for families living within district boundaries was between $20,000 and $29,999 (47.4 percent). Two superintendents reported an average family income in excess of $30,000, while eight (42.1 percent) reported average incomes of between $10,000 and $19,999.

Bonding

Inquiry was made as to the success or failure of the most recent bond election in the state's rural districts. Seventeen districts (94.4 percent) indicated that the last bond election was passed by the voters. The dollar amount of the most recent bond ranged from $150,000 to $1,800,000, with the mean near $575,000.

District Staff

As to the number of full-time elementary teachers (K-6) within each district, the range was two to 24 teachers, with a mean of eight teachers. For full-time secondary teachers (7-12), the range was six

to 28 teachers, with a mean of 11 teachers. Only 50.0 percent of the districts employed at least one part-time elementary teacher while 48.9 percent employed at least one part-time secondary teacher.

Inquiry was made as to the number of "specialists" employed by rural districts. The percent of districts reporting the use of "specialists" were: special education, 78.9 percent; school counselor, 78.9 percent; media specialist/librarian, 73.6 percent; school nurse, 63.2 percent; school psychologist, 52.6 percent; subject matter specialists, 15.8 percent; vocational education director, 10.5 percent; adult education director, 10.5 percent. None of the districts employed, either full-time or part-time, a community education director.

Teacher Salaries

The annual beginning salary for new teachers in the sample ran from $11,686 to $16,242. The mean beginning salary was $13,035. The top annual teacher salary ran from $15,100 to $26,000, with the mean highest salary near $19,600.

The estimated average annual salary for teachers was $15,729. The range for such salaries ran from $13,731 to $19,000. This average salary is still far below the $17,400 average annual teacher salary in the United States (both rural and urban schools) reported in the fall of 1980 by the National Center for Education Statistics.

Information regarding the number of "steps" in the salary schedule revealed a range of 10 to 26 "steps," with an average of 19.

In relation to salaries paid to newly hired elementary principals, the range was $16,000 to $30,000, with a mean of $23,220. However, 73.7 percent of the superintendents did not report the

starting salary for new elementary principals. For secondary principals, the range was $24,000 to $32,000, with a mean near $26,525. However, 78.9 percent of the superintendents did not report this salary.

Secondary Subject Preparations

For secondary teachers, information was sought as to the average number of different subject preparations. The range ran from two to more than six. In fact, 23.5 percent of the superintendents reported that their secondary teachers had six or more different subject preparations; 64.7 percent reported five or more different subject preparations.

When asked about the percent of secondary teachers teaching "one or more classes" outside their subject area(s) of certification, the range was zero to 100 percent. Four superintendents (25.0 percent) reported no teachers teaching outside their major field(s). The mean percentage was 20.6.

Teacher Recruitment

Superintendents were asked to rank the subject matter areas which posed the greatest difficulty from the standpoint of recruitment. Ranked first was "mathematics," indicated by 58.8 percent of the superintendents. Ranked second in difficulty was "sciences" (52.9 percent) and ranked third was vocational education (31.3 percent).

District Problems

The superintendents were asked to respond to a list of current problems with their responses ranging from "not a problem" to "a serious problem." Among problems cited, "school finances" was the single "serious problem" most frequently cited by superintendents.

Other problems ranked in order of seriousness included: teacher turnover, indifferent parents, inadequate inservice instruction, school/community relations, teacher/student rapport, unruly students, inadequate facilities, lack of instructional equipment, teacher/administration rapport, teachers moonlighting, teacher militancy.

With reference to problems involving students, superintendents cited "lack of student motivation" and "lack of educational goals or directions" as the most serious student problems. Other problems, ranked in order of seriousness, included: alcoholism, cheating in school, drugs, and sex-related problems.

Student Performance

In relation to student performance on national tests, 61.1 percent of the superintendents indicated their students' performance was "close to the national average" while 27.8 percent reported performance "above the national average" and 11.1 percent rated student performance "well above the national average." No superintendent rated student performance "below the national average."

As to number of graduates in 1981-82, rural superintendents reported a range of three graduates to 57 graduates, with a total of 302 graduates in the sample and a mean of 18 graduates. Of the total number of graduating seniors, 41.1 percent went on to college, 13.7 percent attended technical school, and the remaining 45.2 percent sought employment. Furthermore, of the total 302 graduating seniors in 1981-82, two were recognized as National Merit Exam Finalists, 20 (6.6 percent) scored 25 or above on the American College Test (ACT Exam), and two scored 1100 or above on the Scholastic Aptitude Test

(SAT Exam). Hence, a total of 7.9 percent achieved recognition as a National Merit Exam finalists, or achieved high scores on either the ACT or SAT exams.

Education Programs

Inquiries were made as to the use of various resources to "enhance learning opportunities for students." Superintendents were asked to indicate the use of various resources from "used extensively" to "not used." Cooperative sharing of personnel and/or equipment was most frequently cited as "used extensively," however, such use was not widespread. Other resources included: "computer assisted instruction, television, video-taped instruction, traveling teacher within the district, correspondence courses, and regional vocation and education service centers."

Extra Curricular Sports Offered

Superintendents reported the following sports sponsored by their district: football, 73.7 percent; basketball, 100 percent; baseball, 57.9 percent; softball, 10.5 percent; volleyball, 84.2 percent; cross country track, 15.8 percent; track and field, 89.5 percent; wrestling, 52.6 percent; tennis, 5.9 percent; swimming, 5.9 percent; and gymnastics, 21.1 percent. Neither soccer, tennis, nor golf were offered in any of the districts.

Selected Course Offerings

Information provided by the superintendents indicated that foreign languages were offered as follows: Spanish, 55.6 percent; German, 5.6 percent; French, 16.6 percent; and Latin, none. Other curriculum offerings included: calculus, 50.0 percent; chemistry, 83.3 percent; computer science 77.8 percent; electronics, 11.1

percent; physics, 77.8 percent; and vocational agriculture, 44.4 percent.

COMPARISON TO NATIONAL FINDINGS

The findings presented in this report were part of a nation-wide study of K-12 and 1-12 rural school districts which enroll 900 students or less (Smith, Muse and Barker, 1983). The nation-wide study made use of the same questionnaire and was mailed to 816 superintendents in the United States. Six hundred forty-two questionnaires were returned, representing a 78.6 percent response rate. A comparison of the major findings from Colorado with those of the nation-wide study are highlighted in Table 1.

SUMMARY

1. Many rural districts in Colorado are faced with declining enrollments. It is likely that consolidation will continue to be an issue for those opposed to the higher per pupil expenditure of operating small schools.

2. The average geographical size of rural districts in Colorado is three times the national average for rural districts. In addition, on the average, Colorado students are bused considerably farther than the typical rural student in the United States. Transportation costs, distance from school, and student time spent traveling help support the movement in some Colorado districts to follow a four-day school week.

3. State support to help provide funding to aid small schools in Colorado is far above the national average. Nevertheless, many of the state's rural districts still do not receive special funding for small

schools.

4. Rural residents in Colorado are concerned about the education of their children and support rural educators, as indicated by the high percentage of bond issues passed.

5. The beginning teacher salary in Colorado is above the national average for rural districts. However, the average annual salary for experienced teachers ($15,729) is below the national average for rural districts ($16,377) and is still below the nationwide average ($17,400) for teachers (urban and rural) reported over two years ago by the National Center for Education Statistics.

6. Most rural superintendents in Colorado are paid between $25,000 to $35,000 annually. This is lower than the national average for rural administrators.

7. The most common work week of a rural superintendent in Colorado is between 51 and 55 hours (42.1 percent). Length of the most frequently reported work week in the national rural education study was between 46 to 50 hours (35.1 percent).

8. Rural superintendents in Colorado indicate that the major challenges facing the school districts are: financial support, teacher recruitment, school/community relations, and district consolidation.

9. The average student/teacher ratio in Colorado's small, rural districts is 12.4 to one.

TABLE 1

COMPARISON OF MAJOR FINDINGS FOR K-12 RURAL SCHOOL DISTRICTS IN COLORADO WITH K-12 AND 1-12 DISTRICTS IN THE UNITED STATES. EACH ENROLLING 900 STUDENTS OR LESS. REPORTED BY SUPERINTENDENTS, 1983.

Variable	Colorado	Nation
1. Average number of students in district	239	436
2. Percent of full-time superintendents	63.2	75.8
3. Percent of principal/superintendent combination	31.6	20.9
4. Average number of years service as superintendent	4.8	6.4
5. Percent of superintendents holding Bachelor's as highest degree	5.3	0.6
6. Percent of superintendents holding Master's as highest degree	73.7	55.4
7. Percent of superintendents holding Ed. Specialist as highest degree	10.5	31.5
8. Percent of superintendents holding Doctorate as highest degree	10.5	13.1
9. Average size of school district in square miles	677	245
10. Average one-way distance in miles which students are bused to school	28	19
11. Percent of student population bused to school	69.6	64.4
12. Percent of districts indicating that enrollment trend is to increase in size	10.5	17.9
13. Percent of districts indicating that enrollment trend is to decrease in size	47.4	36.2
14. Percent of districts indicating that enrollment trend is to remain the same	42.1	45.8
15. Percent of districts receiving state funding or aid for small districts	73.7	24.2
16. Percent of families within district boundaries receiving gross annual income between $10,000 and $19,999	42.1	59.2
17. Percent of families within district boundaries receiving gross annual income between $20,000 and $29,999	47.4	22.7
18. Percent of families within district boundaries receiving gross annual income between $30,000 and $39,999	10.5	4.3
19. Average amount of last bond issue	$573,642	$715,847
20. Average number of full-time elementary teachers in district	8.4	14.4
21. Average number of full-time secondary teachers in district	10.9	15.7
22. Average student/teacher ratio	12.4:1	14.5:1
23. Percent of districts with a special education program	78.9	86.6
24. Percent of districts having a school counselor	78.9	79.4

TABLE 1 (continued)

Variable	Colorado	Nation
25. Percent of districts having a school psychologist	52.6	33.8
26. Percent of districts having a school nurse	63.2	45.1
27. Percent of districts having subject matter specialists	15.8	22.0
28. Percent of districts having an adult education director	10.5	22.0
29. Percent of districts having a media specialist or librarian	73.6	80.9
30. Percent of districts having a community education director	0	7.8
31. Percent of districts having a vocational education director	10.5	22.0
32. Average beginning salary for new teachers	$13,035	$12,492
33. Average top salary for teachers	$19,662	$20,506
34. Average current salary for teachers	$15,729	$16,377
35. Average beginning salary for new elementary principals	$23,220	$20,754
36. Average beginning salary for new secondary principals	$26,525	$22,670
37. Average number of "step" to reach top of the salary schedule	16.8	14.5
38. Average number of seniors graduated per district (1981-82)	17.8	34.5
39. Percent of graduating seniors (1981-82) attending college or university	41.1	38.6
40. Percent of graduating seniors (1981-82) attending technical school	13.7	14.1
41. Percent of graduates (1981-82) scoring 25+ on ACT, 1100+ on SAT, or recognized as a National Merit Exam finalist	7.9	11.0
42. Percent of districts with football program	100	69.2
43. Percent of districts with basketball program	100	100
44. Percent of districts with baseball program	57.9	55.4
45. Percent of districts with softball program	10.5	37.1
46. Percent of districts with volleyball program	84.2	65.7
47. Percent of districts with cross country track program	15.8	23.3
48. Percent of districts with soccer program	0	7.0
49. Percent of districts with wrestling program	52.6	25.2
50. Percent of districts with golf program	0	22.4
51. Percent of districts with track and field program	89.5	78.7
52. Percent of districts with tennis program	0	16.3
53. Percent of districts with gymnastics program	21.5	5.8
54. Percent of districts offering Spanish	55.6	41.8
55. Percent of districts offering German	5.6	9.7
56. Percent of districts offering French	16.7	18.9

TABLE 1 (continued)

Variable	Colorado	Nation
57. Percent of districts offering Latin	0	3.3
58. Percent of districts offering calculus	50.0	35.9
59. Percent of districts offering chemistry	83.3	79.4
60. Percent of districts offering computer science	77.8	60.3
61. Percent of districts offerings electronics	11.1	13.0
62. Percent of districts offering vocational agriculture	44.4	63.1
63. Percent of districts offering physics	77.8	67.7
64. Most serious problem facing district	finances	finances
65. Second most serious problem facing district	securing teachers	securing teachers
66. Most difficult discipline in which to secure teachers	math	math
67. Second most difficult discipline in which to secure teachers	sciences	sciences

BIBLIOGRAPHY

Nachtigal, Paul. Improving Education in Rural America: Past Efforts Future Opportunities, Accepting Reality: An Agenda for the Future Improvement of Rural Education. Washington, D.C.: National Institute of Rural Education. December 1979, ERIC Document, ED 196, 635.

Smith, Ralph, Ivan Muse and Bruce Barker. "A Study of Rural School Districts in the United States and Implications for Teacher Education." Paper presented at American Education Research Association. Montreal, Canada, April 11-15, 1983. 17 pages.